SYSTEM AND METHOD UTILIZING A SOLID STATE POWER CONTROLLER (SSPC) FOR CONTROLLING AN ELECTRICAL LOAD OF A VARIABLE FREQUENCY THREE-PHASE POWER SOURCE

ABSTRACT OF THE DISCLOSURE

A solid state power controller (SSPC) (100) includes a power switching controller (30) and power switching devices (PSDs) (20A, 20B, 20C) for controlling each phase of a multiple-phase load to switch-on or -off at a zero-crossing point of a corresponding phase of a multiple-phase power source. The power switching controller (30) may include an ASIC (25A, 25B, 25C) for controlling each PSD (20A, 20B, 20C) to switch the corresponding load phase on or off. The ASIC (25A, 25B, 25C) may be configured to control the PSD (20A, 20B, 20C) to switch-on the load phase at a detected zero-crossing point of the voltage supplied by the corresponding phase of the power source, and to switch-off the load phase at a detected zero-crossing point of the load current supplied by the corresponding phase of the power source.